



REFLECTIVE INSULATION 



INSTALLATION GUIDE

feel protected

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INTRODUCTION

This installation guide is designed to help users of Reflective Air Insulation understand how it works and to install it properly for maximum benefit. Please review this guide thoroughly before installing Reflective Air in any application. Pay particular attention to the product diagrams, installation instructions and warnings for uses where Reflective Air is not recommended.

This Installation Guide will greatly enhance your ability to get the maximum thermal performance from installing Reflective Air in the recommended applications.

How Reflective Insulation Works

In a typical building, heat is transferred in three ways:

Conduction (Direct contact)

Transfer of heat between two solid materials that are in contact with each other.

Convection (Circulation)

Transfer of heat that is caused by the movement of heated air.

Radiation (Electromagnetic)

Transfer of heat via infrared waves from one surface to another.

Given that radiant heat has as much impact on temperature as conduction and convection in a typical building, reflective insulation should be used in addition to, or in place of, mass insulation to effectively control heat loss and reduce energy consumption. Unlike mass insulation, reflective insulation blocks 95% of radiant heat and provides superior thermal performance. Mass insulation products do not reflect heat, instead they slow down the transfer of heat and are not effective against radiant heat.

About Reflective Air

Reflective Air is a uniquely designed system of materials made of multiple layers of heat-sealed air bubbles layered with a 99% pure aluminum surface. This unique multi-laminate combination delivers a high performance insulation product suitable for agricultural, industrial and commercial buildings, home construction and many other applications and uses.

Reflective Air Insulation is a unique thermal barrier system that works all four seasons. During the winter Reflective Air reflects escaping heat back toward your living spaces, reducing heat loss and lowering heating bills.

During the summer it reflects heat away from your living spaces blocking significant heat gain in your house and cutting air conditioning costs.

Reflective Air Works

Consider these benefits:

- Blocks 95 percent radiant heat transfer
- 100 percent effective against convective heat transfer
- Effective vapor barrier
- Maintains temperatures and humidity distribution of the structure
- Used in conjunction with, or in place of, mass insulation



Attic



Wall



Heating,
Ventilation And
Air Conditioning



Under Floor



Under Slab

RECOMMENDED APPLICATIONS

When you are planning to install a reflective insulation, it's important to remember that air space plays a key role in keeping heat in and reflecting it away. Typical installations call for a $\frac{3}{4}$ -inch air space between the insulation and the cavity materials, as in a wall, to achieve optimal product performance. Reflective insulation is recommended for the following applications.

- Pre-engineered steel buildings
- Residential, wood framed structures
- Walls, roofs, ceilings, crawlspaces and garage doors
- Block or concrete walls
- Concrete slabs
- Plumbing and HVAC

The applications where reflective insulation should not be used are "open-air" structures, structures without exterior walls, structures with partial exterior walls, and/or structures in which the insulation will be exposed to the exterior elements, including direct sunlight, moisture, and/or intense heat.

BEFORE YOU BEGIN

Supplies

Locate and organize all necessary supplies prior to beginning installation.

- Razor knife
- Reflective tape with acrylic adhesive
- Tape measure - Gloves (optional)

Safety Check

- When working near electrical circuits and outlets, basic precautions should be observed; power should be turned off until installation is complete.
- Wear proper eye protection

Local Building Codes & Ordinances

Always check with local building codes prior to using the product or assure adherence of building codes and guidelines.

WARNING:

Please consult an experienced building and/or construction professional with regard to installation and use of this product.

Reflective insulation is not recommended for use in certain applications, including “open-air” structures, structures without exterior walls, structures with partial exterior walls, or structures in which the insulation will be exposed to the exterior elements, sunlight, moisture, and/or intense heat.

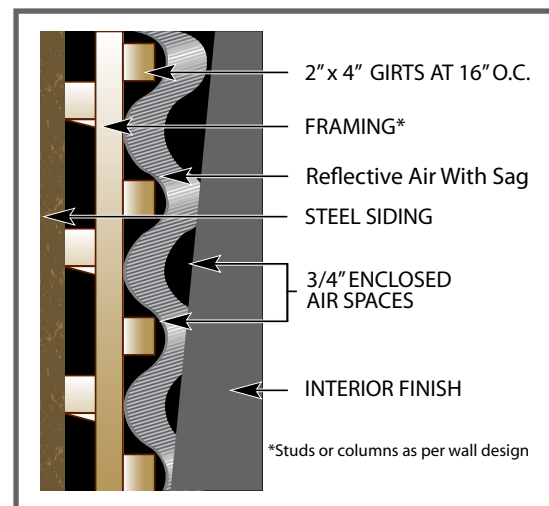
Reach Barrier Reflective Air Insulation is subject to a 10-Year Manufacturer’s Limited Warranty.

For a complete copy of the Warranty and a complete copy of the Installation Guide for this product, please visit: WWW.REACHBARRIER.COM

1. POST FRAME APPLICATIONS

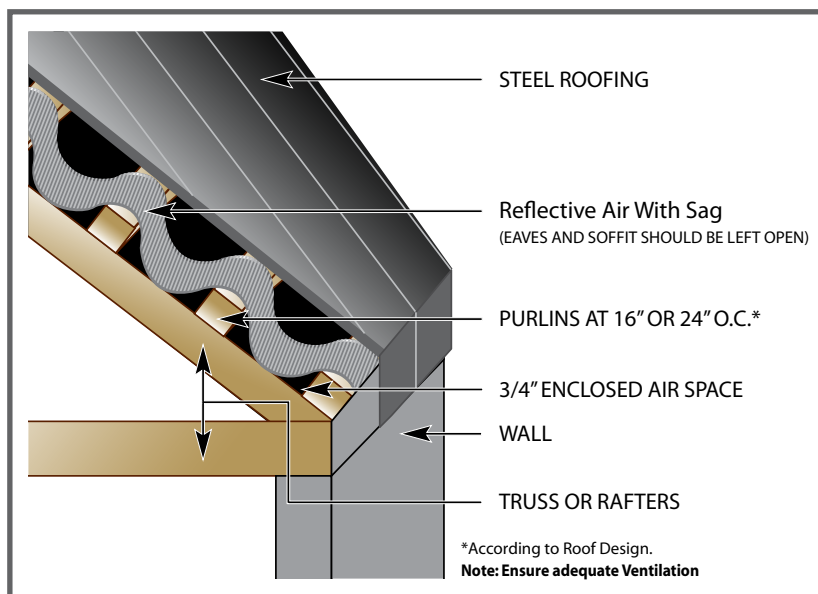
1.1 Purlins or Flush Frame Application Walls

1. Wrap the Reflective Air around the inside of the framework.
2. Fasten the Reflective Air to the outside of each girt.
3. Leave enough Reflective Air between the girts to allow the material to bow inward, creating a 3/4" enclosed airspace.
4. Securely tape all seams using reflective tape.
5. The interior finishes to be installed using approved attachment methods.



1.2 Purlins or Flush Frame Application Roof

1. Tack fasten the Reflective Air to the purlins.
2. Ensure that enough material is draped between the purlins to allow the Reflective Air to sag approximately 3/4" thereby creating an airspace between the roof decking and the material.
3. After the first 4 ft. of Reflective Air is fastened, attach the roof sheeting over that area.
4. Ensure that all of the adjoining seams are taped using reflective tape.
5. Repeat the above steps for the next section of the roof.
6. Ensure that the ridge vent is left exposed (if applicable).
7. The ventilation design should not be tampered with when installing any insulation.



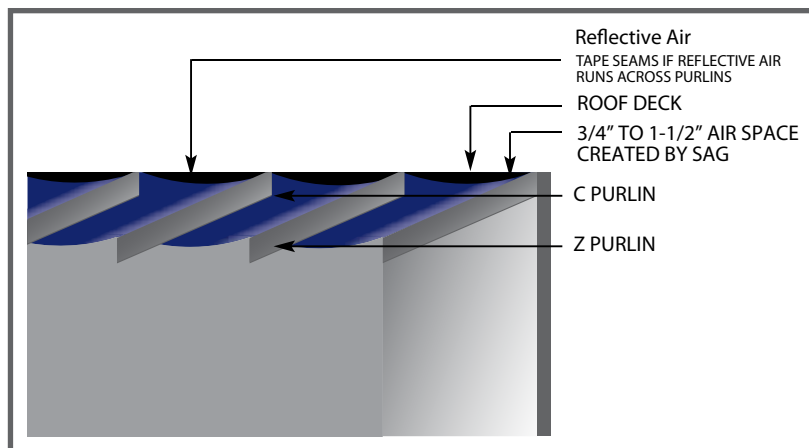
2. PRE-ENGINEERED STEEL APPLICATIONS

NOTE: When installing any type of insulation in a building, never alter the ventilation design.

2.1 Roof Application Method A

This application is suitable for Z or C purlins.

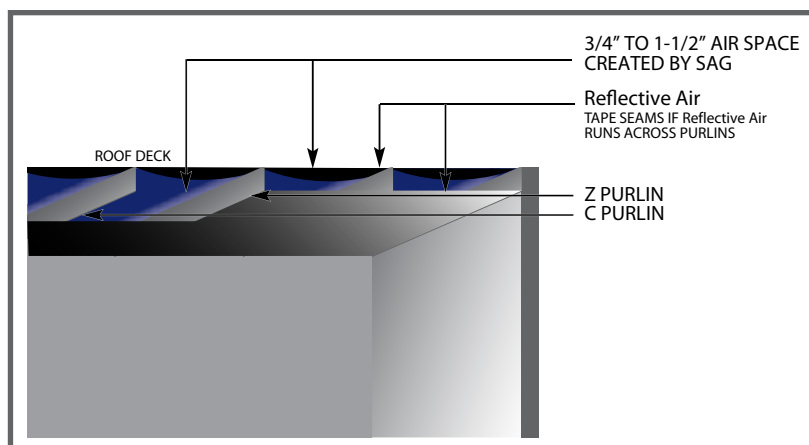
1. Measure working area where Reflective Air will be applied.
2. Drape the Reflective Air across the top of the purlins allowing enough material to sag so that a 3/4" to 1 1/2" airspace is achieved.
3. If the Reflective Air is run across the purlins, ensure that all seams are securely taped using reflective tape.
4. Apply the steel roof deck using approved methods of installation.



2.2 Roof Application Method B

This application is suitable for Z or C purlins.

1. Measure working area where Reflective Air will be applied.
2. Drape the Reflective Air across the top of the purlins allowing enough material to sag so that a 3/4" to 1 1/2" airspace is achieved.
3. Apply the Reflective Air to the bottom facing of the purlins, ensuring it is pulled tight.
4. If the Reflective Air is run across the purlins, ensure that all seams are securely taped using reflective tape.
5. Apply the steel roof deck using approved methods of installation.

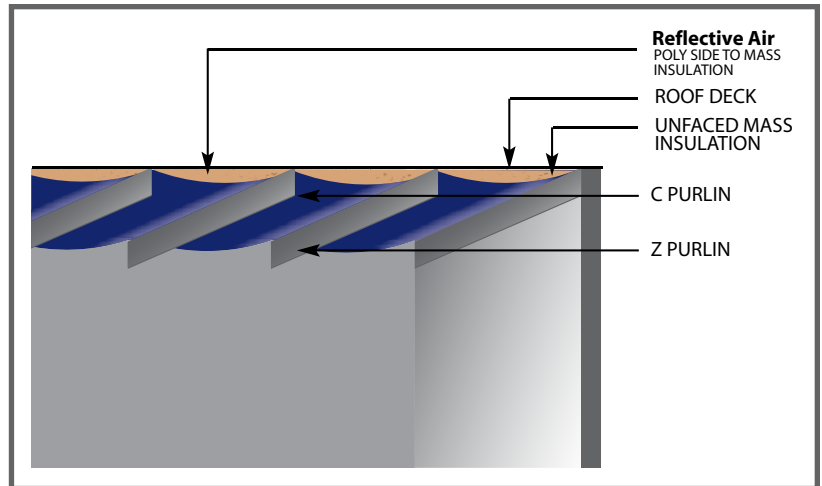


2. PRE-ENGINEERED STEEL APPLICATIONS

2.3 Roof Application Method C

This application is suitable for 6" Z or C purlins with 3.5" or 6" unfaced mass insulation.

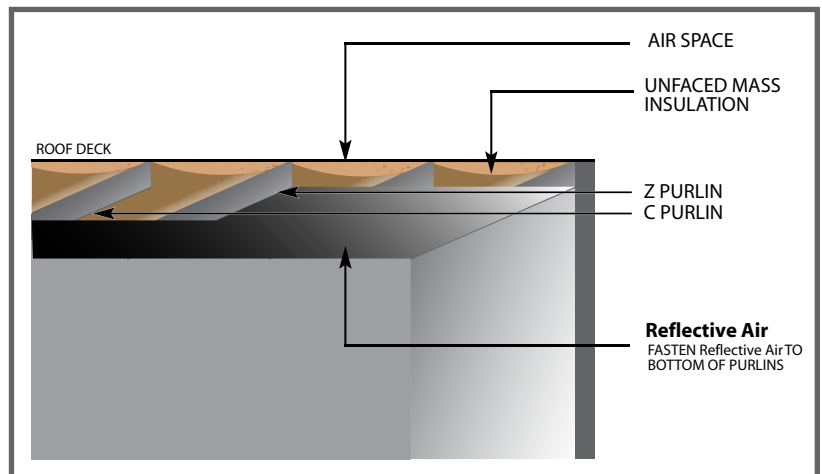
1. Measure working area where Reflective Air will be applied.
2. Apply the Reflective Air to the underside of the mass insulation, attaching it to the top face of the purlins.
3. Ensure that the white polyethylene side of the Reflective Air is facing the mass insulation.
4. Securely tape any exposed seams using reflective tape.
5. Apply the steel roof deck using approved methods of installation.



2.4 Roof Application Method D

This application is suitable for 6" Z or C purlins with 3.5" unfaced mass insulation.

1. Measure working area where Reflective Air will be applied.
2. Apply the Reflective Air to the bottom facing of the purlins, ensuring that it is pulled tight.
3. Securely tape any exposed seams using reflective tape.
4. Apply the steel roof deck using approved methods of installation (if not already in place).

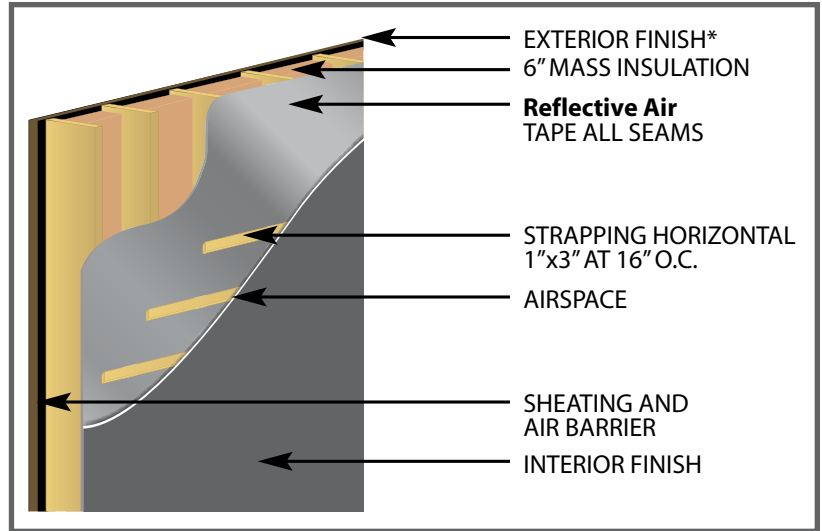


3 - RESIDENTIAL APPLICATIONS - WOOD FRAMING

3.1 Typical Residential Wall Application Method A

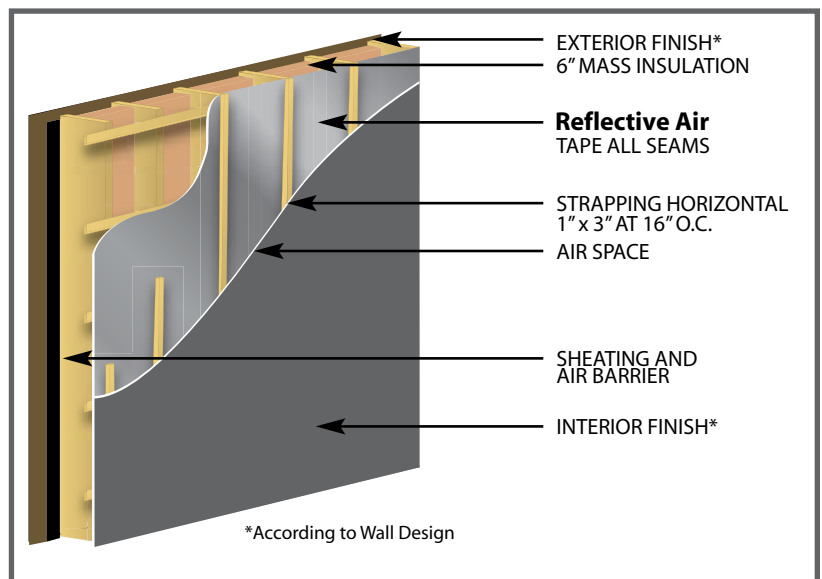
1. Measure working area where Reflective Air will be applied.
2. Fasten the Reflective Air to the stud facing using 1/2" staples every 4" - 6".
3. The white polyethylene side of the Reflective Air should be facing the mass insulation.
4. Apply 1 x 3 strapping running horizontally (at 16" on centre) to the Reflective Air, running the length of the wall.
5. Ensure that all seams are securely taped using reflective tape.
6. Fasten the interior finish to the strapping using approved construction methods.

NOTE: This installation method will decrease sound transmission



3.2 Typical Residential Wall Application Method B

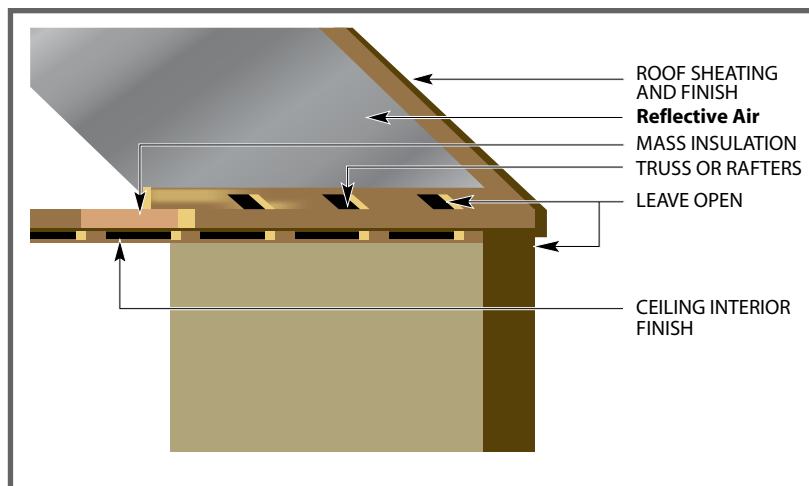
1. Apply 1 x 3 strapping running horizontally (at 16" on centre) to the stud facing, running the length of the wall.
2. Measure working area where Reflective Air will be applied.
3. Fasten the Reflective Air to the stud facing using 1/2" staples every 4" - 6".
4. Ensure that all seams are securely taped using reflective tape.
5. Apply 1 x 3 strapping running vertically (at 16" on centre) on top of the Reflective Air, running the length of the wall.
6. Fasten the interior finish to the strapping using approved construction methods.



3 - RESIDENTIAL APPLICATIONS - WOOD FRAMING

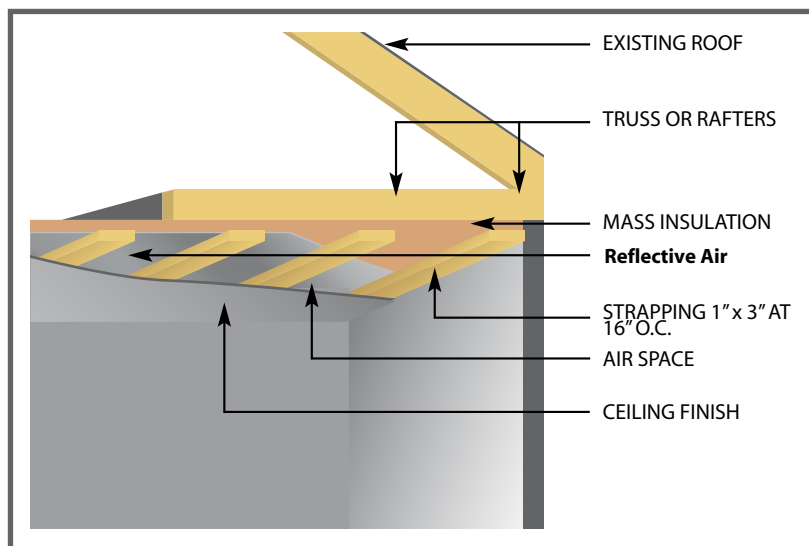
3.3 Typical Retrofit for Roof Installation

1. Measure working area where Reflective Air will be applied.
2. Fasten the Reflective Air to the bottom of the rafter facing using 1/2" staples every 4" - 6".
3. Ensure that all seams are securely taped using reflective tape.
4. Leave approximately 2" free of material at the eaves and soffit/ridge vent to ensure that good ventilation is maintained



3.4 Typical Ceiling Application

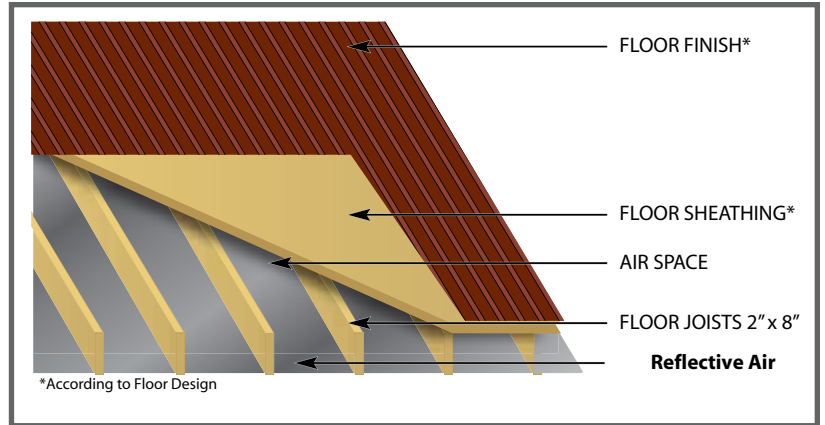
1. Measure working area where Reflective Air will be applied.
2. Fasten the Reflective Air to the bottom of the joist facing using 1/2" staples every 4" - 6".
3. The white polyethylene side of the Reflective Air should be facing the mass insulation.
4. Ensure that all seams are securely taped using reflective tape.
5. Apply 1 x 3 strapping running horizontally (at 16" on centre) to the Reflective Air, running the length of the ceiling.
6. Fasten the interior finish to the strapping using approved construction methods.



3 - RESIDENTIAL APPLICATIONS - WOOD FRAMING

3.5 Typical Basement Ceiling / Heated Crawlspace Application

1. Measure working area where Reflective Air will be applied.
2. Fasten the Reflective Air to the bottom of the joist facings with the shiny side towards the ceiling using 1/2" staples every 4" - 6".
3. Ensure that all seams are securely taped using reflective tape.



3.6 Garage Door Application

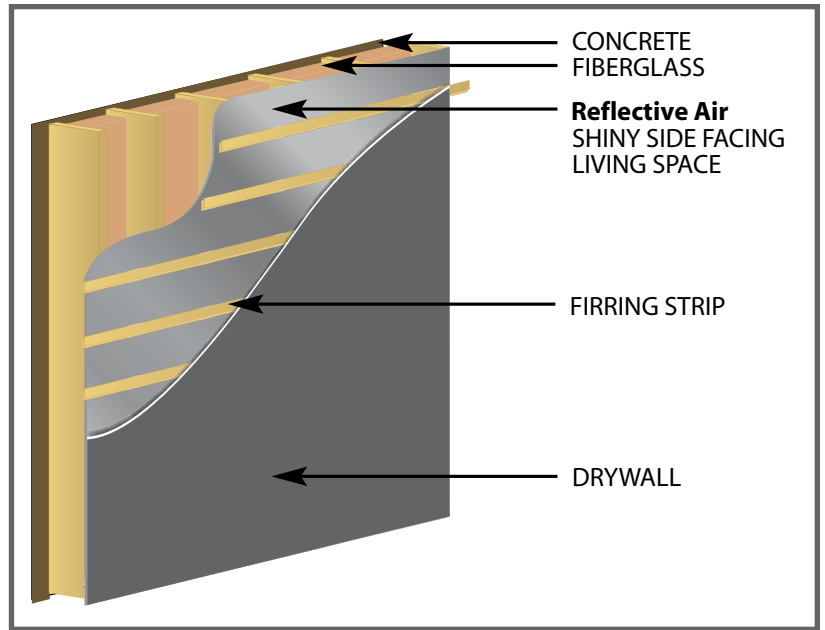
1. Apply double sided tape vertically and equally spaced across the width of the door.
2. Cut Reflective Air into strips matching the dimensions of each door panel.
3. For improved thermal performance, add 3/4" air space between Reflective Air and door.



4 - BLOCK OR CONCRETE WALL

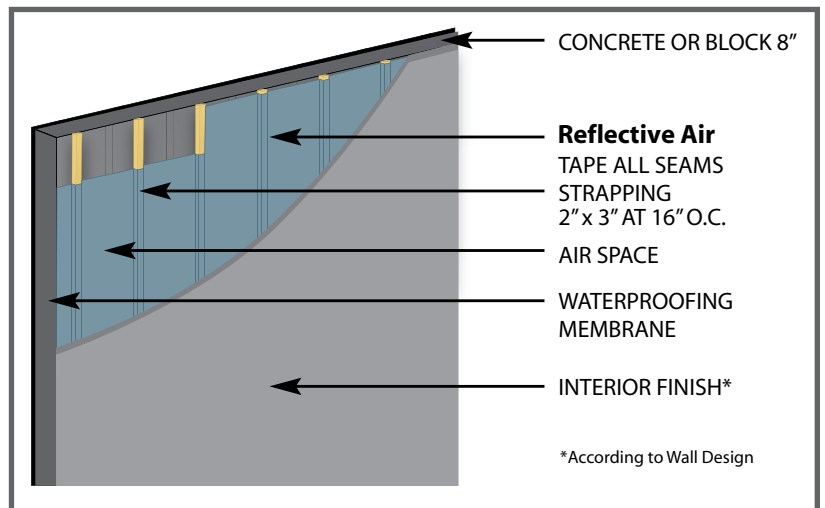
4.1 Block or Concrete Wall Method A (Below Grade / Basement)

1. Frame wall.
2. Add mass insulation (optional).
3. Staple Reflective Air to 2 x 4 studs, every 6" (overlapping seams).
4. Use foil tape to join the seams.
5. Horizontally mount firing strips.
6. Install drywall.



4.2 Block or Concrete Wall Method B

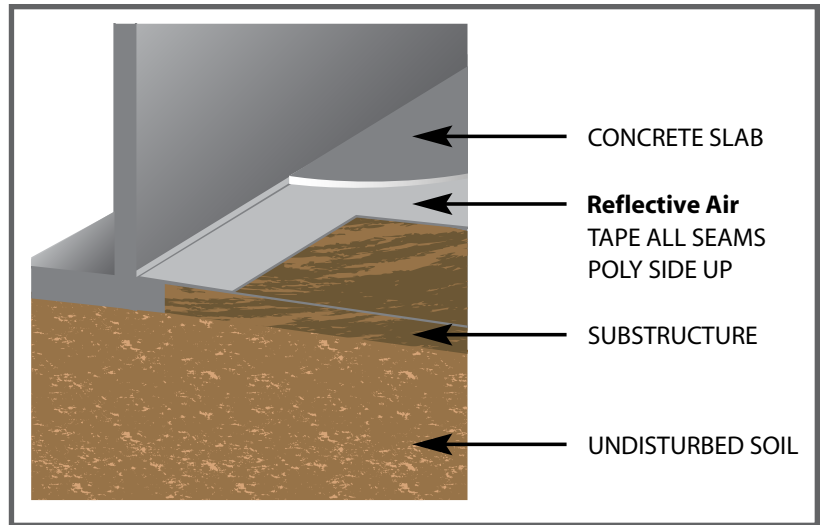
1. Apply 2 x 3 strapping running vertically (at 16" on centre) running the length of the wall.
2. Measure working area where Reflective Air will be applied.
3. Fasten the Reflective Air to the stud facing using 1/2" staples every 4" - 6".
4. Ensure that all seams are securely taped using reflective tape.
5. Fasten the interior finish to the strapping using approved construction methods.



5 - CONCRETE SLAB APPLICATIONS

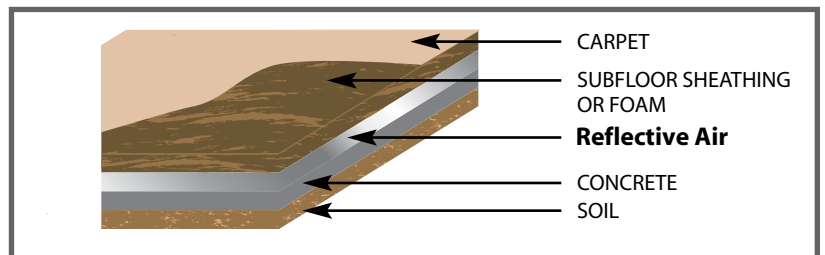
5.1 Application Under Slab

1. Measure working area where Reflective Air will be applied.
2. Apply Reflective Air on top of the gravel in the same manner as a polyethylene vapor barrier.
3. Ensure that the shiny side of the material is downwards.
4. Butt Reflective Air material, covering the entire floor.
5. Ensure that all seams are securely taped using a vapor barrier tape.
6. Pour slab using approved construction methods.



5.2 Typical Application on Existing Slab

1. Apply the Reflective Air to the concrete slab with the shiny side facing up.
2. Ensure that all seams are securely taped using a foil tape.
3. Apply the sub floor sheathing or foam and finish using approved methods.

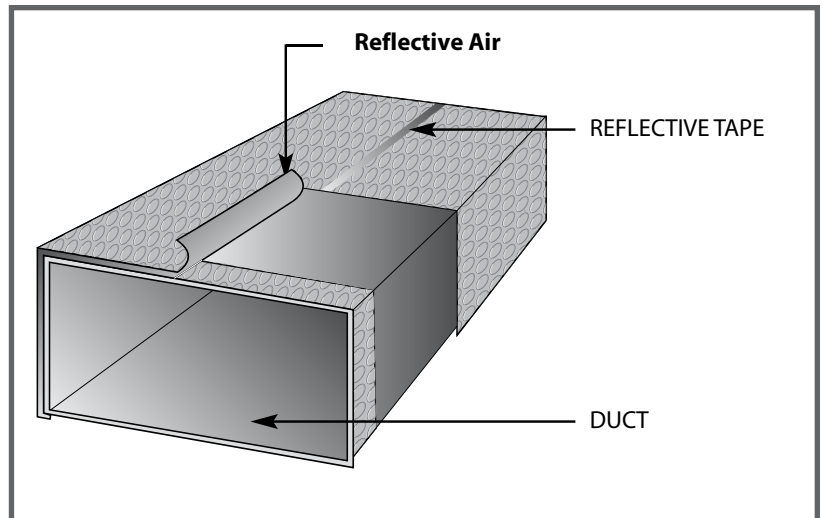


6 - PLUMBING & HVAC

Wrapping your exposed ductwork and pipes with Reflective Air can significantly reduce your heating and cooling costs by minimizing radiant energy loss. Condensation problems caused by cold pipes as well as radiant heat loss by hot pipes can also be reduced. Your ducts or pipes can be wrapped in one of two ways: Lineal Wrapping or Spiral Wrapping.

6.1 Lineal Duct Wrap

Reflective Air provides an important thermal break and vapor barrier for air ducts. Unaffected by moisture, it inhibits mold and mildew. This lightweight, highly flexible product can easily be installed around most complicated air ducts. The 99% pure aluminum surface is like a mirror for heat, keeping the heat away from cooler air in the duct and resisting heat loss in the winter.

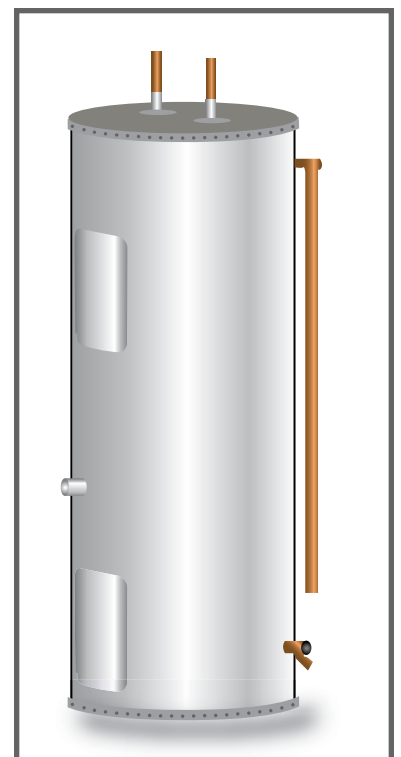


1. Measure the area to determine the square footage of Reflective Air required.
2. Cut Reflective Air to shape and wrap around the duct.
3. Tape all exposed adjoining seams with reflective tape.

6.2 Water Heater Jacket

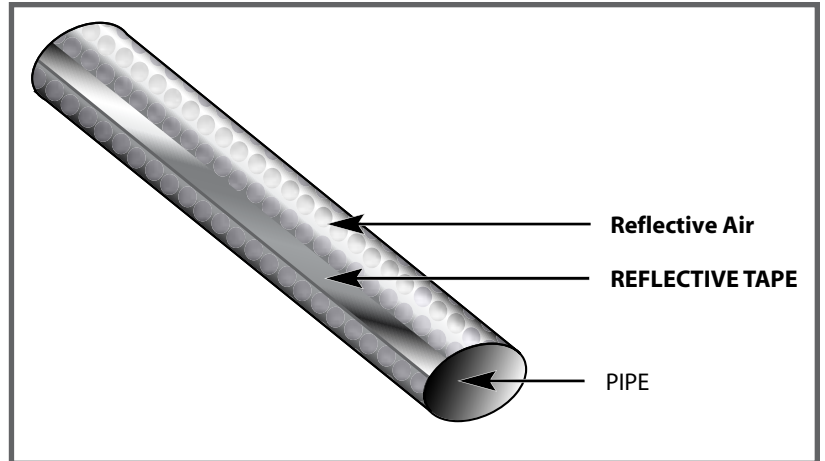
1. Stops 97% of Radiant Heat Loss
2. Conserves Heat
3. Clean, Non-Toxic, Non-Allergenic, No fibers, Vapor/Air Barrier

Kit Contains: insulation, foil tape.



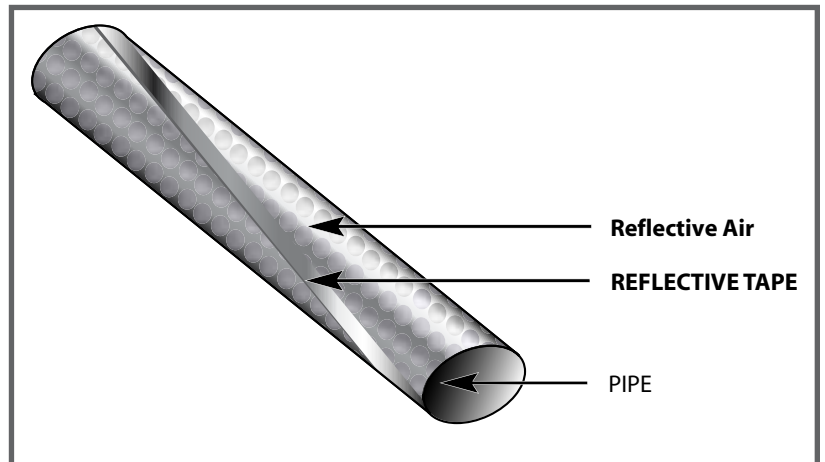
6.3 Lineal Pipe Wrap

1. Cut a length of pipe wrap from Reflective Air roll.
2. Place the white poly side of the insulation on pipe.
3. Pre-shape Reflective Air pipe wrap by wrapping it around the pipe.
4. Seal all seams with reflective tape.



6.4 Spiral Pipe Wrap

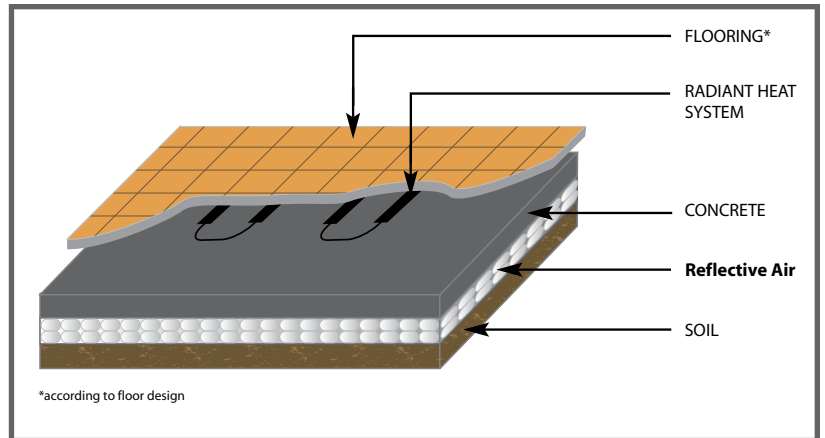
1. Wrap the pipe in a diagonal fashion using Reflective Air.
2. The foil should be pointing outward.
3. Ensure that a 1" overlap is maintained at all times.
4. Do not leave any open air spaces or exposed pipe.
5. Fasten the Reflective Air to each end of the pipe using reflective tape.
6. Tape all exposed adjoining seams using reflective tape if required for perfect airtight applications.



6 - PLUMBING & HVAC

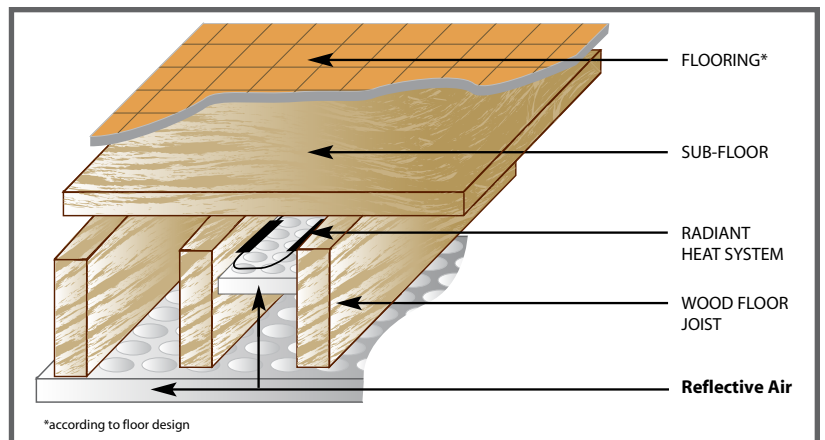
6.5 Radiant Floor: In Concrete Floor

1. Unroll Reflective Air over the sand or gravel.
2. Butt, or overlap the seams.
3. Seal the seams with a vapor barrier tape.
4. Install radiant heating and then pour concrete as usual.



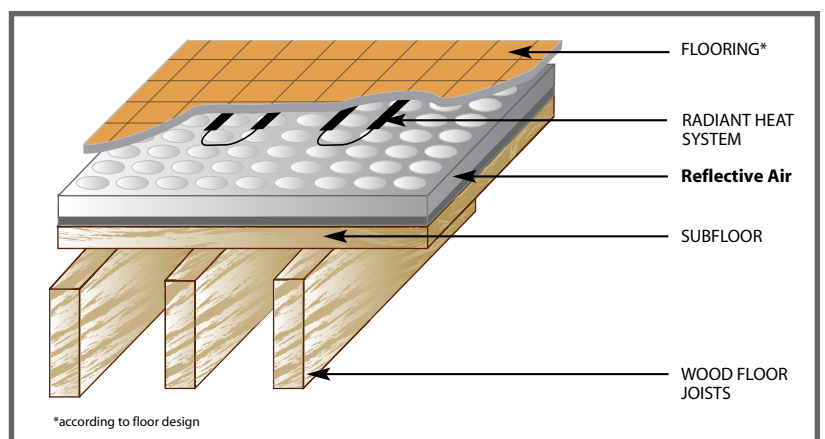
6.6 Radiant Floor: Under or Between Wood Joists

1. Unroll and staple Reflective Air under floor joists.
2. Staple Reflective Air to the bottom of the floor joists, overlapping by at least 1/2".



6.7 Radiant Floor: Over Wood or Existing Floor

1. Unroll Reflective Air over existing wood floor.
2. Butt the seams.
3. Seal the seams with vapor barrier tape.
4. Install radiant heating as usual.



10 YEAR WARRANTY

Reach Barrier warrants that its reflective insulation will be free from defect in materials and workmanship resulting in delamination or decomposition, for a period of 10 years from the date of purchase, provided that the product is installed according to the manufacturer's specifications and has been used in an approved application.

This warranty applies only to the original purchaser of the insulation and is subject to the limitations, terms, conditions, and exclusions set forth herein.

In the event of a valid warranty claim, Reach Barrier will provide replacement insulation of equal or higher quality for the warranted product that is found to be defective. Reach Barrier, at its sole discretion and option, may choose to refund the original purchase price of the product in lieu of replacement. Reach Barrier will not be liable for removal of any defective product, the labor associated with the removal or replacement of the product, or any other consequential, special, commercial, incidental, or punitive damages.

EXCLUSIONS. This warranty is applicable only to damaged or failed product caused by or in the presence of normal atmospheric conditions. This warranty is void and claims are excluded from this warranty in the event that the subject insulation: 1) is installed in an open-air building (i.e., a structure having no side walls or partial side walls); 2) is installed in an application having exposure to the exterior elements, including but not limited to direct sunlight, water, moisture, and/or intense heat; 3) is subject to misuse, abuse, or improper handling during transportation, installation, or storage; 4) is improperly installed or maintained; 5) ordinary wear and tear, 6) is damaged by Acts of God, including but not limited to lightning, flood, tornado, hail, earthquake, or other natural phenomena; 7) is treated, processed, or changed in any manner, 8) is subject to extraordinary conditions, such as chemicals, gases, abrasions, pressure, movement, or temperature, 9) is used in an improperly designed, engineered, or built structure, or 10) is installed or used contrary to the written use and installation instruction of Reach Barrier.

The foregoing express warranties are the only warranties applicable to this product, and no other warranties or representations of any kind, whether express, implied, or statutory, including but not limited to warranties of fitness for a particular purpose, warranties of merchantability, or liabilities arising in contract, tort, or otherwise are applicable. This warranty will automatically terminate and become void upon the sale, transfer, or conveyance of the products, building, or property on which the products are used.

This warranty is limited to the original owner of the building where the product is first installed and is specifically non-assignable and nontransferable. This warranty applies only to the above-described insulation product manufactured by Reach Barrier and does not cover any other accessories, fixtures, goods, or materials on the premises.

Warranty Claims. In order to submit a warranty claim, please contact the distributor or installer of the insulation within the warranty period. If contact with the distributor or installer of the insulation is not practicable, users should contact Reach Barrier at (972)331-3933. In order to submit a valid claim under this warranty, the user must provide proof of purchase demonstrating the purchase and installation dates of the subject insulation, as well as a sample of the product. Claims under this warranty will be valid and considered only in the event that the claimed product was manufactured by Reach Barrier. Reach Barrier shall have the right to test the claimed product and to determine whether it was manufactured by Reach Barrier or another entity.